

Methodology Used to Construct Groundwater Contour Plots

This appendix includes contour maps from concentrations of analytes in groundwater beneath the Process Areas. The plots are divided into four groups: metals, radionuclides, TPHs, selected VOCs, and selected groundwater quality parameters. The goal for the creation of the contour plots is to indicate areas of interest, “bull’s-eyes” of higher concentration, and to illustrate the spatial distribution of analyte concentrations throughout the Process Areas.

The method used to contour the data was Kriging Interpolation. Kriging belongs to the family of linear least squares estimation algorithms and is used to predict unknown values from data observed at known locations. However, the method does produce contour artifacts on the plots due to the geometry of the plots. The plots produced are a square area with borders created from the northernmost, easternmost, westernmost, and southernmost boreholes in the Process Areas. However, the orientation of the Process Areas creates areas in the southeast and northwest corners which contain no boreholes. The lacks of boreholes in these areas create data gaps; thus, the contour artifacts are located there. The contour plots were created with Surfer (Golden Software, 1993-1996).

Minimum and maximum concentrations of analytes were used to create the contour plots and are shown with a color scale. Further, the regional groundwater flow direction and current and former Process Areas facilities which may have impacted the groundwater are also shown on the contour plots.